

C L A I M S

9. An exposure and modulation device for modulating an exposure intensity in an integrated digital screen-imaging system, comprising a light source; a light modulator that includes a plurality of rows of light-modulating cells; a device for imaging on said light modulator; a device for imaging said light modulator on a photo sensitive material; a device for producing a relative motion between said light modulator and said photo sensitive material, so that a direction of motion is substantially perpendicular to a direction of said rows of said light-modulating cells; a device for scrolling a data pattern through various columns of said light modulator at a speed so that the imaging of any data pattern is kept substantially stationary relative to said photosensitive material during said motion; and at least one device for stopping the scrolling procedure after a certain adjustable number of cells of said light modulator used for exposure of said photosensitive material.

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10. An exposure and modulation device as defined in claim 9, wherein said light modulator includes a digital mirror device.

11. An exposure and modulation device as defined in claim 9, wherein said light modulator has 1024*758 cells.

12. An exposure and modulation device as defined in claim 9,
wherein said light modulator includes a liquid-crystal array.

13. An exposure and modulation device as defined in claim 9,
wherein said light modulator includes magneto-optical cells.

14. An exposure and modulation device as defined in claim 9,
wherein said light modulator includes ferroelectric cells.

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15. A method for exposure and modulation of exposure intensity in an integrated digital screen imaging system in which light from a light source is imaged on a light modulator that includes a plurality of rows of light-modulating cells, the method comprising the steps of modulating the light from the light source by the light modulator; thereafter imaging the light modulator on a photosensitive material moving in a motion relative to the light modulator; selecting a direction of motion substantially perpendicular to a direction of the rows of the light-modulating cells; scrolling data to be imaged on the photosensitive material through columns of the light modulator at a speed so that the imaging of any data pattern is kept substantially stationary relative to the photosensitive material during the motion; and stopping the scrolling after a certain adjustable number of cells of the light

modulator used to expose the photosensitive material, depending on the exposure time specified for a respective pixel on the material to be exposed.

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16. A method as defined in claim 15; and further comprising moving the data to be imaged to any column so that they can be transferred from there to subsequent columns.

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